

*Theodore C. Chan, MD, FACEP*

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San Diego, CA 92130

*tcchan@ucsd.edu*

December 13, 2012

Burt T. Osborne  
Assistant City Attorney  
Office of the City Attorney  
350 South 5<sup>th</sup> Street, room 210  
Minneapolis, MN 55415

RE: Smith vs. City of Minneapolis, No. 11-CV-03071.

Dear Mr. Osborne:

At your request, below is a written summary of my opinions regarding the above named case. My opinions are based on my training, experience and research as a Professor of Emergency Medicine in the Department of Emergency Medicine at the University of California San Diego School of Medicine and Health System. I have conducted numerous human research studies on the topic of restraint physiology and less lethal weapons that have been published in peer-reviewed medical journals and presented at national medical meetings and scientific assemblies. I am also a practicing emergency physician, board-certified in the specialty of emergency medicine, and a Fellow of the American College of Emergency Physicians and American Academy of Emergency Medicine.

In formulating my opinions regarding the specific issues of this case, I have relied upon my own scientific and clinical research on restraint physiology, a review of the current medical and scientific literature relevant to this case, and the specific materials you forwarded me regarding the above named case, including the Hennepin County Medical Examiner's report, Report from the office of the Ombudsman for Mental Health and Developmental Disabilities, Minneapolis Police Department report; CD of pen camera video; EMS agency report; medical records from Fairview Southdale and Hennepin County Medical Center; and expert reports of William Manion, Michael Berkow, John Ryan, and Michael Baden. Except as noted, my opinions and testimony will be to a reasonable degree of medical certainty. If additional pertinent information is revealed and provided to me subsequent to this letter, my opinions may change.

Briefly, Mr. Smith was a 28 year-old man with a history of underlying psychiatric disorder and polysubstance dependence who was involved in an altercation and combative struggle with law enforcement personnel on September 9, 2010. Mr. Smith was at a YMCA gym behaving in an erratic manner for which Minneapolis Police officers were called to the scene. Officers Callahan and Gorman found Mr. Smith

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uncooperative and resisting their efforts to engage with him, subsequently leading to a combative struggle. During the struggle, the officers tazed Mr. Smith multiple times and finally subdued and restrained him in a prone position.

After the struggle, Mr. Smith became unresponsive and without a pulse. Officers initiated CPR efforts at that time. Shortly thereafter, paramedics arrived to find Mr. Smith in cardiac arrest. Advanced cardiac life support (ACLS) measures were initiated including intubation and intravenous medications, after which there was a return of spontaneous circulation in the field. Mr. Smith was subsequently transmitted to Hennepin County Medical Center where resuscitative and care measures were continued in the Emergency Department and he was admitted to the Intensive Care Unit. Despite these efforts, Mr. Smith remained unresponsive with minimal brainstem function. After 8 days of hospitalization, supportive measures were withdrawn and Mr. Smith subsequently died on September 17, 2010.

An autopsy was conducted by the Hennepin County Medical Examiner's office. The immediate cause of death was reported as anoxic encephalopathy due to cardiopulmonary arrest and mechanical asphyxia with significant conditions of prone restraint position, mixed chlorpheniramine and dextromethorphan intoxication, schizoaffective disorder, recent conducted energy device use, and physical exertion during struggle.

By way of background, mechanical asphyxia related to prone restraint has also been known as positional asphyxia, a term that was initially used to describe the deaths of individuals who were found in body positions that compromised respiratory function. Most commonly, these cases involved individuals in whom their position led to obstruction of the upper airway (such as from extreme head-neck hyperflexion) and who were alcohol intoxicated (to the point of being unable to remove themselves from the lethal position).<sup>1</sup> In the late 1980s, the term positional asphyxia or restraint asphyxia was applied as a cause of death in reports of sudden deaths that occurred to persons who were being restrained while in custody. Proponents of this theory argued that individuals placed in the hobble position (hogtie, hobble or prone restraint position in which individuals were placed prone on their stomach with wrists handcuffed behind the back and ankles secured to the handcuffs) were unable to breathe because the position caused chest wall and abdominal restriction that prevented adequate expansion of the lungs and subsequently led to asphyxiation. However, many argued that other factors played a greater role in causing these deaths reported in the medical literature.

There is little scientific evidence to support the notion that prone restraint results in life-threatening respiratory compromise or asphyxiation. The theory of positional asphyxia as applied to custody restraint was largely based on the work of Reay et al, who studied 10 healthy subjects after exercise and found delayed recovery of blood oxygen levels and heart rate in the hobble position.<sup>2</sup> We conducted a more comprehensive study investigating the effects of body position on respiratory function after exertion that was published in the *Annals of Emergency Medicine* and reviewed in another article published in the *American Journal of Forensic Medicine and Pathology*.<sup>3,4</sup> In our study

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involving 15 human volunteers, we studied respiratory function in the sitting, supine (laying on the back), prone (laying on the stomach), and hobble position. While we found a slight progressive decrease in pulmonary function (the amount of air movement in the lungs), these changes were within normal range. Accordingly, we found no evidence of decreased blood oxygen levels or increased carbon dioxide levels (to suggest inadequate ventilation) in the hobble position. These findings have been confirmed by other independent investigators who found no significant decrease in blood oxygen levels in individuals placed in similar restraint positions.<sup>5,6</sup>

As a result of this evidence, Dr. Reay, one of the chief proponents of the positional asphyxia theory with custody restraint, has written that "the hog-tied prone position should be viewed as not producing significant physiologic respiratory compromise, and it does not produce any serious or life-threatening respiratory effects".<sup>7</sup> Moreover, a recent, large epidemiologic study of over 1000 police restraint cases found no association between prone positioning and death or asphyxiation.<sup>8</sup> Mr. Smith was not restrained in the hogtie position, but in the less restrictive prone position. Moreover, law enforcement personnel noted, and videotape appears to confirm, that he was breathing and vocalizing after he was restrained in the prone position, indicating he was not at risk for respiratory compromise to the point of asphyxiation as a result of his restraint position.

While Mr. Smith was being restrained, Officer Gorman, who weighed approximately 160 lbs, placed his knee on Mr. Smith's shoulder. It is unclear what weight force if any may have been applied to Mr. Smith's chest and thorax as a result of this action. So-called mechanical asphyxia from compression refers to the notion that additional weight force during the restraint causes greater respiratory compromise to an individual that can lead to asphyxiation. However, the amount of force applied by this action does not appear on the video to be sufficient to cause significant compression of the thoracic cavity. Moreover, on autopsy, there was little evidence to suggest that he suffered any marked increased in intrathoracic cavity pressure as a result of weight force compression to his back, chest, or thoracic cavity. Again, personnel noted, and the videotape appears to confirm, that he was breathing or vocalizing after the struggle during the time force may have been applied.

We have conducted two studies investigating the effect of weight force while restrained on human volunteers. In our initial study, we found no evidence of hypoxia (decrease in oxygen levels) or hypoventilation (increase in carbon dioxide levels) in human subjects on whom moderate amounts of weight were placed on their back in the prone restraint position.<sup>9</sup> In our subsequent study, we placed up to 225 pounds of weight force on human subjects in the prone restraint position and found no life-threatening abnormalities in ventilation.<sup>10</sup> These results are consistent with other investigators who have conducted similar weight force studies on the prone restraint position and found no evidence of hypoxia to indicate risk for asphyxiation.<sup>11</sup>

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In conclusion, it is my opinion that mechanical asphyxia from prone restraint or compression did not cause respiratory compromise or asphyxiation that would have led to Mr. Smith's death.

In accordance with the Rules of Civil Procedure, my compensation for services rendered in association with this case are \$450/hour, including travel time and expenses. Prior cases in which I have provided testimony over the past four years are: Chavez v. City of Los Angeles, 2008; Medina v. City of Los Angeles, 2008; McCullaugh v. Summit County, et al., Ohio, 2009; Marquez v. City of Phoenix, Arizona, 2009; La Blanc v. City of Los Angeles, et al., 2010; Martin v. Broadview Heights, Ohio, 2010; Petrisor v. City of Bellevue, Washington, 2011; Gabales v. County of San Joaquin, 2011; Burdine v Kaiser, Ohio, 2011.

Should you have any further questions, please do not hesitate to contact me at any time.

Sincerely,



Theodore C. Chan, MD  
Professor of Clinical Medicine  
Medical Director  
Department of Emergency Medicine  
University of California San Diego Medical Center

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**References**

- <sup>1</sup> Bell MD, Rao VJ, Wetli CV, et al: Positional asphyxiation in adults: a series of 30 cases from Dade and Broward County Florida medical examiner offices from 1982 to 1990. *American Journal of Forensic Medicine and Pathology* 1992; 13: 101.
- <sup>2</sup> Reay DT, Howard JD, Fligner CL, Ward RJ: Effects of positional restraint on oxygen saturation and heart rate following exercise. *American Journal of Forensic Medicine and Pathology* 1989; 9: 16.
- <sup>3</sup> Chan TC, Vilke GM, Neuman T, Clausen JL: Restraint position and positional asphyxia. *Annals of Emergency Medicine* 1997; 30: 578.
- <sup>4</sup> Chan TC, Vilke GM, Neuman T: Reexamination of custody restraint position and positional asphyxia. *American Journal of Forensic Medicine and Pathology* 1998; 19(3): 201.
- <sup>5</sup> Schmidt P, Snowden T: The effects of positional restraint on heart rate and oxygen saturation. *Journal of Emergency Medicine* 1999; 17(5): 777.
- <sup>6</sup> Parkes J: Sudden death during restraint: a study to measure the effect of restraint positions on the rate of recovery from exercise. *Med. Sci. Law* 2000; 40(1): 39.
- <sup>7</sup> Reay DT: Death in custody. *Clinics in Laboratory Medicine* 1998; 18(1): 1.
- <sup>8</sup> Hall CA, McHale AMD, Kader AS, et al: Incidence and outcome of prone positioning following police use of force in a prospective, consecutive cohort of subjects. *J Forensic Leg Med* 2012;19:83-9.
- <sup>9</sup> Chan TC, Neuman T, Clausen J, Eisele J, Vilke GM: Weight force during prone restraint and respiratory function. *Am J Forensic Med Pathol* 2004; 25(3):185-189.
- <sup>10</sup> Michalewicz BA, Chan TC, Vilke GM, Levy SS, Neuman TS, Kolkhorst FW: Ventilatory and metabolic demands during aggressive physical restraint in healthy adults. *J Forensic Sci* 2007;52(1):171-175.
- <sup>11</sup> Cary NRB, et al: The effect of simulated restraint in the prone position on cardiorespiratory function following exercise in humans. *J Physiol* 1998;525:30p.

## **CURRICULUM VITAE**

### **THEODORE CRAIG CHAN, M.D., FACEP, FAAEM**

#### **OFFICE ADDRESS:**

Department of Emergency Medicine  
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200 West Arbor Drive  
San Diego, CA 92103-8676

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#### **EDUCATION:**

Academic: B.A. in History with Highest Distinction in General Scholarship,  
1983-87 University of California, Berkeley  
Berkeley, California

Medical School: M.D., University of California, San Francisco School of Medicine  
1988-92 San Francisco, California

Internship: Department of Internal Medicine  
1992-93 University of California, San Francisco Medical Center  
San Francisco, California

Residency: Department of Emergency Medicine  
1993-96 University of California, San Diego Medical Center  
San Diego, California (Chief Resident: 1995-96)

**LICENSURE:** California Medical License Number G-78148, 1994

#### **BOARD CERTIFICATIONS:**

National Board of Medical Examiners, 1993

Diplomate, American Board of Emergency Medicine, 1997; Recertification 2007

#### **PROFESSIONAL SOCIETY MEMBERSHIPS:**

American Medical Association, 1990

California Alumni Association, 1990

American College of Emergency Physicians, 1992

Society for Academic Emergency Medicine, 1996

Fellow, American College of Emergency Physicians, 1999

Fellow, American Academy of Emergency Medicine, 2005

**APPOINTMENTS:**

7/06 - Present Vice Chair and Associate Director, Department of Emergency Medicine, University of California, San Diego (UCSD) Medical Center

7/05 - Present Professor of Clinical Medicine, UCSD School of Medicine

1/05 - Present Medical Director and Clinical Service Chief, Emergency Department, UCSD-Hillcrest Medical Center

1/05 - Present Medical Director and Clinical Service Chief, Emergency Department, UCSD-Thornton Hospital

4/99 - Present Director, Custody Services, UCSD Medical Center

7/94 - Present Base Hospital Physician, UCSD Medical Center

**PREVIOUS EXPERIENCE:**

1998-2008 Medical Director, Metropolitan Medical Strike Team, County of San Diego

7/96 – 7/06 Assistant Director, Department of Emergency Medicine, UCSD Medical Center

7/01 – 6/05 Quality Assurance Director, Department of Emergency Medicine, UCSD Medical Center

7/01 – 6/05 Associate Professor of Clinical Medicine, UCSD School of Medicine

7/01 – 12/04 Associate Medical Director, Emergency Department, UCSD-Hillcrest Medical Center and UCSD-Thornton Hospital

7/96 - 6/01 Assistant Clinical Professor of Medicine, UCSD School of Medicine

1994 - 1996 Physician, Department of Emergency Medicine, Kaiser Permanente Medical Center, San Diego, California

1994 - 1996 Medical Consultant, Med America Health Resource, San Diego, California

1/96 - 6/96 Flight Physician, Mercy Air Medical Transport Service, San Diego, California

7/93 - 12/95 Flight Physician, Life Flight Air Medical Transport Service, UCSD Medical Center

1987 - 1988 Fellow, California State Senate, Senate Committee on Insurance, Claims and Corporations, Sacramento, California

1986 Intern, Office of the Assistant Surgeon General, Washington, D.C.

**CERTIFICATIONS:**

Advanced Cardiac Life Support Provider, 1992-96  
Advanced Cardiac Life Support Instructor, 1996  
Pediatric Advanced Life Support (PALS) Provider, 1993  
PALS Course Director for UCSD School of Medicine, 1996  
Advanced Trauma Life Support Provider, 1993  
HAZMAT Level I Training, 1996

**AWARDS:**

1984 Frank Kraft Award Scholarship, University of California, Berkeley  
1986 Gordon Sproul Award Recipient, University of California, Berkeley  
1987 Phi Beta Kappa, University of California, Berkeley  
1987 University Medal Finalist, University of California, Berkeley  
1988 California Senate Resolution of Commendation, Awarded by the Senate Rules Committee, August 22, 1988, Sacramento, California  
1996 Outstanding Resident of the Year, Department of Emergency Medicine, University of California, San Diego Medical Center  
1996 Resident Academic Achievement Award, Emergency Medicine Council of Residency Directors  
1999 "Golden Apple" Teaching Award, UCSD Emergency Medicine Residency Graduating Class of 1999  
2000 Faculty of the Year, UCSD Emergency Medicine Residency Graduating Class of 2000  
2000 Best Research Poster Presentation, California Chapter of the American College of Emergency Physicians (CAL/ACEP) Scientific Assembly, Dana Point, California  
2000 Outstanding Consultant for 1999-2000, presented by the *Annals of Emergency Medicine* Editorial and Consulting Boards, acknowledging dedicated effort to improve the quality of research published in the field of Emergency Medicine, and to the success of the journal  
2001 Best Oral Presentation, CAL/ACEP Scientific Assembly, Santa Clara, California  
2001 Top Consultant for 2000-2001, presented by the *Annals of Emergency Medicine* Editorial and Consulting Boards



- 2002 Top Consultant for 2001-2002, presented by the *Annals of Emergency Medicine* Editorial and Consulting Boards
- 2003 Top Consultant for 2002-2003, presented by the *Annals of Emergency Medicine* Editorial and Consulting Boards
- 2004 Academy of Clinician Scholars, University of California San Diego
- 2005 Top Peer Reviewer, *Annals of Emergency Medicine*
- 2005 2005 Top Doctors, San Diego County Medical Society
- 2005 Senior Reviewer, *Annals of Emergency Medicine*
- 2006 Senior Reviewer, *Annals of Emergency Medicine*
- 2006 2006 Top Doctors, San Diego County Medical Society
- 2007 Top Peer Reviewer, *Annals of Emergency Medicine*
- 2007 2007 Top Doctors, San Diego County Medical Society
- 2008 Finalist, Second Annual San Diego Health Care Champion Award, San Diego Business Journal
- 2008 2008 Top Doctors, San Diego County Medical Society
- 2008 Outstanding Community Partner, Community Health Improvement Partners (CHIP), Hospital Association of San Diego and Imperial Counties
- 2009 Public Health Champion Finalist, County of San Diego Health and Human Services Agency
- 2009 Top Peer Reviewer, *Annals of Emergency Medicine*
- 2009 Award Finalist for IMPACT-ED, 14<sup>th</sup> Annual Golden Watchdog Public-Private Partnership Award Finalist, San Diego County Taxpayers Association
- 2009 America's Top Emergency Medicine Physicians, Consumers' Research Council of America
- 2010 Health Care Champion Award, 2010, San Diego Business Journal
- 2011 2011 Top Doctors, San Diego County Medical Society

**CURRENT ACTIVITIES:**

Physician Member, Disaster Medical Assistance Team (DMAT), SD, CA (CA-4), 1994  
Reviewer, *Journal of Emergency Medicine*, Elsevier Science, Inc., 1994  
Editor, Cardiology Section, *Journal of Emergency Medicine*, Elsevier Science, Inc., 1997  
Point of Care Advisory Committee, UCSD Medical Center, 2000

Member, Editorial Board, *Emergency Medicine News*, Lippincott Williams & Wilkins, 2001

Member, Editorial Board, *Emergency Medicine Specialty Reports*, publication of American Health Care Consultants, Atlanta, Georgia, 2001

Chair, San Diego Foundation Disaster Board, 2002

Peer Reviewer, *Emergency Medicine Reports*, publication of American Health Care Consultants, Atlanta, Georgia, 2002

UCSD/San Diego Sheriff Security Working Group, 2003

Editor, *Clinical Briefs in Emergency Medicine*, publication of American Health Consultants, Atlanta, Georgia, 2003

Chair, Communications Subcommittee, Inpatient Task Force, UCSD Medical Center, 2005

Senior Reviewer, *Annals of Emergency Medicine*, Elsevier Science, Inc., 2005

Member, Professional Standings Committee, UCSD Medical Center, 2006

Member, Governor's Interagency Coordinating Council for the Prevention of Alcohol and Other Drug Problems - California Screening, Brief Intervention, and Referral to Treatment (CASBIRT) Subcommittee, 2007

Member, UCSD Inpatient Redesign Task Force, UCSD Medical Center, 2007

Member, California Screening Brief Intervention, Referral, and Treatment (CASBIRT), 2007

Reviewer, *American Journal of Emergency Medicine*, Elsevier, Inc., 2008

Member, ED/Pharmacy Review Committee, 2008

Vice Chair, UCSD Committee on Academic Personnel, 2009; Member since 2008

Member, Thornton Improvement Task Force, 2007

Member, CVC Facilities and Operations Committee, 2009

#### **PREVIOUS ACTIVITIES:**

Seminar Coordinator, Health Policy Seminars, Interdepartmental Studies 130, University of California, Berkeley, 1985-87

Research Intern, International Debt Crisis Project, Institute of International Studies, Geneva, Switzerland, 1989

Student Rep, Legislation Committee, California Medical Association, 1989-90

Instructor, Science and Health Education Partnership Program, University of California, San Francisco School of Medicine, San Francisco Unified Public School District, 1989-91

Clinical Scholars Training, Peking Union Medical College, Beijing, China, 1992

Representative, Clinical Practice Guidelines Committee, Department of Emergency Medicine, UCSD Medical Center, 1994-96

Representative, Quality Assurance Committee, Department of Emergency Medicine, UCSD Medical Center, 1994-96

Representative, California Emergency Medicine Residents Association, 1995-96

Associate Editor, *Journal of Emergency Medicine*, Pergamon Press, 1996

Strike Team Leader, Disaster Medical Assistance Team, 1996

Biological and Chemical Hazardous Materials Medical Support

FBI/SWAT Team Medical Support

1996 Atlanta Olympic Games

Medical Support Physician, Super Bowl XXXII, San Diego, California, January 25, 1998

Member, Managed Care Task Force, Society for Academic Emergency Medicine, 1997-98

Member, Steering Committee, CHIPS (Community Health Improvement Partners), Health Care Association of San Diego and Imperial Counties, 1997-2002

Project Co-coordinator, Influenza immunization program for New Americans in the Mid-City and City Heights communities, in conjunction with San Diego City Fire and Life Safety Services and Project Concern International, Fall 1998

Project Co-coordinator, 911 Educational Outreach Program for New Americans in the Mid-City and City Heights communities, in conjunction with San Diego City Fire and Life Safety

Services and Project Concern International, Fall 1998

Member, Pharmacy and Therapeutics Committee, UCSD Medical Center, 1998-99

Reviewer, *American Journal of Managed Care*, American Publishing Company, 1998-2001

Director, Emergency Department Clinical Resource Management, UCSD Medical Center, 1996

Co-Director, Pediatric Advanced Life Support Course, UCSD School of Medicine, 1997

Member, Research Subcommittee, Prehospital Audit Committee, San Diego County, 1997

Member, CPR Subcommittee, Prehospital Audit Committee, San Diego County, 1997

Member, Outpatient Clinical Guidelines Committee, UCSD Medical Center, 1998

Member, San Diego City EMS Oversight Committee, 1998

Member, San Diego City EMS Prehospital Cardiac Care Subcommittee, 1998

Medical Director, San Diego County Metropolitan Medical Strike Team, 1998

Reviewer, *Annals of Emergency Medicine*, Mosby, 1999

Director, Continuing Quality Assurance Program, UCSD Emergency Department, 1999

Emergency Department Quality Improvement Representative, Patient Care Review Committee, UCSD Medical Center, 2000

Member, Bioterrorism Communication Collaborative, Department of Health and Human Services Agency, County of San Diego, 2001

Member, School of Medicine Graduate Medical Education Committee, 2001

Faculty Search Committee, Department of Emergency Medicine, UCSD Medical Center, 1999, 2001

Faculty, Twenty-first Annual Mammoth Mountain Emergency Medicine Conference, Mammoth Lakes, California, March 2001

Faculty, Third Annual ACEP Emergency Medicine Connection, San Diego, California, March 2001

Member, Health and Human Services Committee, San Diego Foundation, May 2001-2005

Associate Editor, *Emergency Medicine Alert*, publication of American Health Care Consultants, Atlanta, Georgia, 2000-2005

Member, Community Acquired Pneumonia Multidisciplinary Team, JCAHO Oryx Core Measurements, UCSD Medical Center, 2002-2006

Member, Acute Myocardial Infarction Multidisciplinary Team, JCAHO Oryx Core Measurements, UCSD Medical Center, 2002-2006

UCSD Committee on Affirmative Action and Diversity, Member 2004-2007, Vice-Chair 2005-2006, Chair 2006-2007

Member, UCSD Faculty Rights and Welfare Committee, 2006

Member, UCSD Academic Senate Council, 2006-2007

Member, UCSD Senate-Administration Council, 2006-2007

Member, US National Institute of Justice Less Lethal Technical Working Group, 2006  
Institute of Medicine, Committee on Research Priorities in Emergency Preparedness and Response for Public Health Systems, 2007

Member, UCSD Department of Radiology Faculty Search Committee, 2007-2008

Member, Laboratory and Pathology Search Committee – 2007-2009

Member, CDC coordinating Office for Terrorism Preparedness and Emergency Response (CDC COPTER), Special Emphasis Panel for P01 RFA TP-08-001 (Preparedness and Emergency

Response Research Centers: A Public Health Systems Approach, July 2008

Member, USAMRMC Broad Agency Announcements Review Committee, 2009

#### **RESEARCH GRANT FUNDING:**

1. Co-Principal Investigator with Dr. Tom Neuman, for study entitled, "Restraint Position and Positional Asphyxia." Study funded by the County of San Diego, Grant #94-1974R, 1995. Amount: \$33,900.

2. Principal Recipient, unrestricted grant from Cook, Incorporated for Research and Education on the Melcker Cricothyrotomy Kit, 1997-98. Amount: \$10,000.
3. Co-Principal Investigator for study entitled, "Comparison of Respiratory Function in the Prone Maximal Restraint With and Without Additional Weight Force on the Back." American Academy of Forensic Sciences, with Doctors John Eisele, Jack Clausen, Tom Neuman and Gary Vilke, 1999-2000. Amount: \$3,000.
4. Principal Investigator for study entitled, "The Impact of Oleoresin Capsicum Spray on Respiratory Function in Human Subjects in the Sitting and Prone Maximal Restraint Positions." Study funded by the National Institute of Justice, U.S. Department of Justice, 1998-99. UCSD No. 98-7107; USDOJ Federal Award #98-IJ-CX-0079. 2001-02. Amount: \$128,176.
5. Co-Principal Investigator for study entitled, "Improving Access, Awareness and Use of the California Regional Poison Center in Two Ethnically Diverse Communities in San Diego." UCSD Civic Collaborative, with Dr. Richard F. Clark, 2001-02. Amount: \$5,000.
6. Co-Principal Investigator for study to design and assess the impact of a community outreach program to improve awareness and use of the California Poison Control System by Latino and other underserved communities in San Diego. Part of a Community Outreach Partnership Centers Program New Directions Grant from the federal Office of Housing and Urban Development, with Dr. Richard Clark and Dr. Vivian Reznik (UCSD Pediatrics Department), 2002-04. Amount: \$4,000.
7. Principal Recipient, unrestricted grant from Cook, Incorporated for Research and Education on the Cuffed Melcker Cricothyrotomy Kit, 2003. Amount: \$12,000.
8. Principal Investigator & Project Director, for project on Emergency Department Crowding & Safety Net Assessment, funded by the Urgent Matters Program, Robert Wood Johnson Foundation, grant # 048545. Amount: \$150,000 total (\$100,000 technical assistance; \$25,000 UCSD project direction, \$25,000 safety net assessment).
9. Co-Investigator for study entitled Wireless Internet Information System for Medical Response to Disasters (WIISARD), funded by the National Library of Medicine. 2003-2008. Amount: \$3,200,000.
10. Co-Principal Investigator, with Dr. Daniel Davis, for study entitled Emergency Department National Alcohol Screening Day, Alcohol Education Project, funded by NIH, grant #1 R03 AA015120-01. 2005. Amount: \$25,000.
11. Co-Principal Investigator, with Dr. Gary Vilke, for study entitled, "The effect of Taser on Cardiac, Respiratory and Metabolic Physiology in Human Subjects." Study funded by the National Institute of Justice, U.S. Department of Justice, 2005-7. UCSD No. 2006-0846; USDOJ Federal Award #98-IJ-CX-0079. Amount: \$213,941.49

12. Principal Investigator, for study entitled, "Improving Medical Home and Primary Care Access to the Community Clinics Through the ED (IMPACT-ED)." Study funded by the Alliance Healthcare Foundation, 2006-7. Alliance Grant #06-3114. Amount: \$25,000.
13. Principal Investigator, for study entitled, "Evaluation of the Ventilatory and Respiratory Effects of a Restraint Chair on Human Subjects." Study funded by the Institute for the Prevention of In-Custody Deaths, Inc., 1/1/07 to 12/31/07. Amount: \$11,658.00
14. Co-Principal Investigator, with Jean Marshall, RN, for study entitled, "Impact of the State Mandated Nurse-Patient Ratio on ED Crowding, Flow and Patient Care". EMF/ENAF (Emergency Medicine Foundation / Emergency Nurses Association Foundation) Directed Team Grant, ED Overcrowding Research Award, 2007-08. Amount: \$50,000.
15. Co-Principal Investigator, with Dr. Joshua Lee, for project entitled, "San Diego Safety Net Health Information Exchange." Project funded by Pacificare/United Healthcare, 2008-2011. Amount: \$715,000.
16. Co-Investigator for study entitled, "California ED Diversion Project Evaluation." Funded by the California Healthcare Foundation, 05/2008 to 11/2008. Amount \$50,990.
17. Co-Investigator for study entitled, "Safety Net Connect." Funded by the Agreement for Healthcare Safety Net Services, County of San Diego Health and Human Services Agency, 09/2008 to 01/2011. Amount: \$2,016,196.
18. Co-Principal Investigator for study entitled Wireless Internet Information System for Medical Response to Disasters (WIISARD SAGE), funded by the National Library of Medicine, RO1LM009522-01A1. 10/2010-10/2012. Amount: \$3,763,964.
19. Principal Investigator, for study entitled, "ONC/San Diego Beacon Community Collaborative Grant." to advance health information technology. Funded by Office of the National Coordinator for Health Information Technology, Health Resources and Services Administration, 90BC0015/01, 04/2010 to 04/2013. Amount: \$15,275,115.

## **PUBLICATIONS:**

### **Articles**

1. Chan TC, Williams SR, Clark RF: Formic acid burns resulting in systemic toxicity. Ann Emerg Med 1995;26(3):383-386.
2. Chan T, Vilke GM, Williams S: Bidirectional tachycardia associated with digoxin toxicity. J Emerg Med 1995;13(1):89.
3. Bauman BH, Vilke G, Chan T: Dexamethasone use in croup. West J Med 1996;164(1):66.

4. Chan TC, Krishel SJ, Bramwell KJ, Clark RF: Survey of illegal immigrants seen in an emergency department. *West J Med* 1996;164(3):212-216.
5. Chan T, Dunford J: Severe tophaceous gout. *J Emerg Med* 1996;14(2):223.
6. Chan TC, Hayden S: Early retropharyngeal abscess formation after treatment of scarlet fever. *J Emerg Med* 1996;14(3):377.
7. Chan TC: Supracondylar fracture. *J Emerg Med* 1997;15(1):99.
8. Chan TC, Evans SD, Clark RF: Drug-induced hyperthermia. *Crit Care Clinics North Am* 1997;13(4):785-808.
9. Chan TC, Hayden SR, Schwartz B, Fletcher T, Clark RF: Patients' satisfaction when denied authorization for emergency department care by their managed care plan. *J Emerg Med* 1997;15(5):611-616.
10. Chan TC, Vilke GM, Neuman T, Clausen JL: Restraint position and positional asphyxia. *Ann Emerg Med* 1997;30(5):578-586.
11. Moss ST, Chan TC, Buchanan J, Dunford JV, Vilke GM: Outcome study of prehospital patients signed out against medical advice by field paramedics. *Ann Emerg Med* 1998;31(2):247-250.
12. Chan TC, Vilke GM, Neuman T: Reexamination of custody restraint position and positional asphyxia. *Am J Forensic Med Pathol* 1998;19(3):201-205.
13. Howard JD, Reay DT [32(1):116-117] / Chan TC, Vilke GM, Neuman T, Clausen J: Positional asphyxia (Reply to letter to the editor). *Ann Emerg Med* 1998;32(1):117-118.
14. Vilke GM, Mahoney G, Chan TC: Postpartum coronary artery dissection. *Ann Emerg Med* 1998;32(2):260-262.
15. Ma G, Chan TC: Atlantoaxial dislocation. *J Emerg Med* 1999;17(1):113-114.
16. Friedman L, Vilke GM, Chan TC, Hayden SR, Guss DA, Krishel SJ, Rosen P: Emergency department airway management before and after an emergency medicine residency. *J Emerg Med* 1999;17(3):427-431.
17. Brady WJ, Chan TC: Electrocardiographic manifestations: Benign early repolarization. *J Emerg Med* 1999;17(3):473-478.
18. Cardall TY, Chan TC, Brady WJ, Perry JC, Vilke GM, Rosen P: Permanent cardiac pacemakers: Issues relevant to the emergency physician, Part I. *J Emerg Med* 1999;17(3):479-489.
19. Cardall TY, Brady WJ, Chan TC, Perry JC, Vilke GM, Rosen P: Permanent cardiac



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### **Texts/Books**

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101. Chan T, Sloane C, Neuman T, Levine S, Castillo E, Vilke G, Bouton K, Kohokorst F. The impact of the taser weapon on respiratory and ventilatory function in human subjects. *Acad Emerg Med* 2007; 14(5 Suppl 1): S191-192.
102. Buono C, Lyon J, Huang R, Brown S, Liu F, Vilke G, Killeen J, Chan T, Kirsh D, Lenert L. Does wireless technology improve patient tracking in mass casualty incidents? *Acad Emerg Med* 2007; 14(5 Suppl 1): S190.
103. Vilke G, Sloane C, Levine S, Neuman T, Castillo E, Chan T. Does the Taser Cause Electrical Changes in Twelve Lead ECG Monitoring of Human Subjects? *Acad Emerg Med* 2007; 14(5 Suppl 1): S104.
104. Vilke G, Sloane C, Bouton K, Levine S, Neuman T, Castillo E, Kolkhorst F, Chan T. Cardiovascular and metabolic effects of the taser on human subjects. *Acad Emerg Med* 2007; 14(5 Suppl 1): S104-105.
105. Sloane C, Vilke G, Chan T, Levine S, Dunford J. Serum troponin I measurement of subjects exposed to the taser x-26. *Acad Emerg Med* 2007; 14(5 Suppl 1): S103-104.
106. Chan TC, Killeen JP, Castillo EM, Vilke GM, Guss DA. Impact of electronic medication reconciliation on triage times for patients seen in the emergency department. *Ann Emerg Med* 2007; 50(3 Suppl 1):S71.
107. Vilke G, Chan T, Killen J, Castillo E. Impact of psychiatric patient holds on the emergency department overcrowding. *Acad Emerg Med* 2008; 15(5 Suppl 1):S221.
108. Buono C, Lyon J, Chan T, Griswold W, Castillo E, Killeen J, Kirsh D, Lenert L. Does using a wireless, electronic patient data collection system increase patient time on the field? *Acad Emerg Med* 2008; 15(5 Suppl 1):S12.
109. Chan T, Killeen J, Castillo E, Vilke G, Kennedy S, Feinberg R, Guss D. Impact of an internet-based referral appointment system community clinic access and follow-up for ED patients with no primary care. *Acad Emerg Med* 2008; 15(5 Suppl 1):S104.
110. Chan TC, Killeen JP, Vilke GM, Guss DA, Jones K, Marshall J, Moore T, Castillo EM. Impact of mandated nurse-patient ratios on emergency department crowding. *Ann Emerg Med* 2008; 52(4):S44.
111. Bizek G, Castillo E, Vilke G, Chan T. Characteristics and rates of rewarming of

emergency department patients with moderate to severe accidental hypothermia. Ann Emerg Med 2008; 52(4):S104-S105.

112. Vilke GM, Killeen JP, Chan TC, Crumpacker J, Castillo EM. Risk factors and characteristics of falls among emergency department elderly patients. Ann Emerg Med 2008; 52(4):S160.
113. Marsan R, Castillo E, Chan T, Stepanski B, Vilke G. Comparison of prehospital retrospective chart review to prospectively obtained data. Acad Emerg Med 2009; 16(4):S85-S86.
114. Killeen D, Killeen J, Castillo E, Chan T, Vilke G. Emergency department patient evaluation of internet and email access for healthcare information. Acad Emerg Med 2009; 16(4):S132-S133.
115. Sloane C, Chan T, Kohlkorst F, Castillo E, Neuman T, Vilke G. Can a restraint chair cause respiratory or ventilatory compromise? Acad Emerg Med 2009; 16(4):S137.
116. Castillo E, Vilke G, Killeen J, Guss D, Marshall J, Chan T. Impact of mandated nurse-patient ratios on ED medication delivery. Acad Emerg Med 2009; 16(4):S157-S158.
117. Castillo E, Vilke G, Killeen J, Guss D, Feinberg R, Freidman L, Chan T. Factors associated with community clinic follow-up from an ED internet-based referral system. Acad Emerg Med 2009; 16(4):S247-S248.
118. Marmon J, Castillo E, Vilke G, Killeen J, Chan T. The effect of admitting team resident turnover on emergency department patient flow. Acad Emerg Med 2009; 16(4):S257-S258.
119. Chan TC, Killeen JP, Castillo EM, Lee J. San Diego Safety New Health Information Exchange. Ann Emerg Med 2011;58(4) S390.
120. Chan TC, Killeen JP, Rafie S, Humber DM, Chan TC. Emergency Department Care Provider Perception of Department-Based Pharmacist Services. Ann Emerg Med 2011;58(4) S443.

#### **POSTER PRESENTATIONS:**

1. Chan TC, Williams SR, Clark RF: Formic acid skin burns resulting in systemic toxicity. National Toxicology Conference, Rochester, New York; 1995.
2. Chan TC, Krishel SJ, Bramwell K, Clark RF: Survey of undocumented aliens using the emergency department. Society for Academic Emergency Medicine (SAEM) Annual Meeting, San Antonio, Texas; May 1995.
3. Chan TC, Vilke GM, Hayden SR: Structured curriculum in domestic violence and child abuse for emergency medicine residents. SAEM Annual Meeting, Denver, Colorado; May 1996.



4. Chan TC, Clark RF, Schwartz B, Fletcher T, Hayden S: Survey of patients denied ED care by their managed care plan. SAEM Annual Meeting, Denver, Colorado; May 1996.
5. Chan TC, Clark RF, Schwartz B, Fletcher T, Hayden S: Survey of patients denied ED care by their managed care plan. California Chapter of the American College of Emergency Physicians (CAL/ACEP) Scientific Assembly, La Jolla, California; June 1996.
6. Vilke GM, Krishel SJ, Chan TC: Prospective study to evaluate computer use to improve immunization status documentation in ED records. CAL/ACEP Scientific Assembly, La Jolla, California; June 1996.
7. Chan TC, Vilke GM, Neuman T, Clausen JL: Does restraint position result in respiratory compromise? CAL/ACEP Scientific Assembly, Rancho Mirage, California; May 1997.
8. Evans SD, Fisher RP, Vilke GM, Chan TC: Accuracy of urban field paramedics estimating blood loss. CAL/ACEP Scientific Assembly, Rancho Mirage, California; May 1997.
9. Moss S, Chan TC, Buchanan J, Dunford JV, Vilke GM: Outcome study of prehospital patients signed out against medical advice by field paramedics. CAL/ACEP Scientific Assembly, Rancho Mirage, California; May 1997.
10. Chan TC, Vilke GM, Neuman T, Clausen JL: Does restraint position result in respiratory compromise? SAEM Annual Meeting, Washington, DC; May 1997.
11. Evans SD, Fisher RP, Vilke GM, Chan TC: Accuracy of urban field paramedics estimating blood loss. SAEM Annual Meeting, Washington, DC; May 1997.
12. Moss S, Chan TC, Buchanan J, Dunford JV, Vilke GM: Outcome study of prehospital patients signed out against medical advice by field paramedics. SAEM Annual Meeting, Washington, DC; May 1997.
13. Neuman T, Vilke GM, Chan TC, Clausen JL: Changes in pulmonary function associated with position. Undersea & Hyperbaric Medical Society (UHMS) Annual Meeting, Cancun, Mexico; June 1997.
14. Vilke GM, Guss DA, Chan TC: Does a complete neurologic exam adequately screen for significant intracranial abnormalities in minor head injury? ACEP International Conference, Vancouver, British Columbia, Canada; March 1998.
15. Kramer M, Chan TC, Buchanan J, Vilke GM: Does GCS score affect prehospital intubation success rates in trauma patients? ACEP International Conference, Vancouver, British Columbia, Canada; March 1998.
16. Moats T, Chan TC, Ochs M, Buchanan J, Vilke GM: Successful out-of-hospital airway management by emergency medicine technicians-Is using the Combitube.



SAEM Annual Meeting, Chicago, Illinois; May 1998.

17. Hamilton RS, Davis DP, Chan TC, Vilke GM, Hayden SR: The effect of blade type and cervical spinal immobilization on laryngoscopy in a cadaver model of intubation. SAEM Annual Meeting, Chicago, Illinois; May 1998.
18. Vilke GM, Chan TC, Neuman T, Clausen JL: The effect of body positioning on pulmonary function. SAEM Annual Meeting, Chicago, Illinois; May 1998.
19. Friedman L, Vilke GM, Chan TC, Hayden SR, Krishel SJ, Rosen P: Emergency department airway management before and after the start of an emergency medicine residency training program. SAEM Annual Meeting, Chicago, Illinois; May 1998.
20. Davis DP, Bramwell KJ, Hamilton RS, Chan TC, Vilke GM: Cricothyrotomy speed and safety: A comparison between standard open technique and rapid four-step technique using a novel device. SAEM Annual Meeting, Chicago, Illinois; May 1998.
21. Davis DP, Fisher RP, Chan TC, Dunford JV, Vilke GM: Rapid sequence induction for out-of-hospital intubations: A multimedia course designed for paramedics. SAEM Annual Meeting, Chicago, Illinois; May 1998.
22. Chan TC, Buchanan J, Anderson M, Vilke GM: Patient ethnicity and age in prehospital emergency ambulance use and acuity rates. CAL/ACEP Scientific Assembly, Monterey, California; June 1998.
23. Vilke GM, Chan TC, Neuman TS, Clausen JL: The effect of body position on pulmonary function. CAL/ACEP Scientific Assembly, Monterey, California; June 1998.
24. Vilke GM, Dunford JV, Buchanan J, Chan TC: Are opiate overdose deaths related to patient release after naloxone? CAL/ACEP Scientific Assembly, Monterey, California; June 1998.
25. Gerling MC, Hamilton RS, Davis DP, Morris GF, Chan TC, Vilke GM, Garfin SR, Hayden SR: Movement across an unstable cervical spine injury in a cadaver model of intubation. CAL/ACEP Scientific Assembly, Monterey, California; June 1998.
26. Marino A, Vilke GM, Buchanan J, Chan TC: Comparison of prehospital IV and rectal diazepam for the treatment of pediatric seizures. CAL/ACEP Scientific Assembly, Monterey, California; June 1998.
27. Davis DP, Bramwell K, Hamilton RS, Chan TC, Vilke GM: Cricothyrotomy speed and safety: A comparison between standard open technique and rapid four-step technique using a novel device. CAL/ACEP Scientific Assembly, Monterey, California; June 1998.
28. Davis DP, Bramwell K, Hamilton RS, Chan TC, Vilke GM: Effect of blade type and cervical spine immobilization on laryngoscopy in a cadaver model of intubation. CAL/ACEP Scientific Assembly, Monterey, California; June 1998.

29. Marino A, Chan TC, Buchanan J, Vilke GM: Precision of prehospital diazepam dosing for children in status epilepticus. National Association of Emergency Medical Service Physicians (NAEMSP) Mid-Year Meeting, Lake Tahoe, Nevada; July 1998.
30. Marino A, Vilke GM, Buchanan J, Chan TC: Comparison of prehospital IV and rectal diazepam for the treatment of pediatric seizures. NAEMSP Mid-Year Meeting, Lake Tahoe, Nevada; July 1998.
31. Vilke GM, Dunford JV, Buchanan J, Chan TC: Are opiate overdose deaths related to patient release after prehospital naloxone? NAEMSP Mid-Year Meeting, Lake Tahoe, Nevada; July 1998.
32. Chan TC, Vilke GM, Anderson ME, Ray LU: Prehospital data on safety restraint use in children and adolescents involved in motor vehicle crashes. California Center for Childhood Injury Prevention Conference, Sacramento, California; September 1998.
33. Sloane C, Chan TC, Vilke GM, Hayden SR, Krishel SJ, Rosen P: Rapid sequence induction intubation of trauma patients in the prehospital versus hospital setting. ACEP Research Forum, San Diego, California; October 1998.
34. Marino A, Vilke GM, Buchanan J, Chan TC: Comparison of prehospital IV and rectal diazepam for the treatment of pediatric seizures. ACEP Research Forum, San Diego, California; October 1998.
35. Marino A, Chan TC, Buchanan J, Vilke GM: Precision of prehospital diazepam dosing for children in status epilepticus. ACEP Research Forum, San Diego, California; October 1998.
36. Davis DP, Bramwell K, Hamilton RS, Chan TC, Vilke GM: The fresh-frozen cadaver free-larynx model for cricothyrotomy training. ACEP Research Forum, San Diego, California; October 1998.
37. Chew GS, Chan TC, Bramwell K, Davis DP, Vilke GM: Does the syringe esophageal detector device accurately detect an esophageal intubation following gastric distention from air insufflation? ACEP Research Forum, San Diego, California; October 1998.
38. Chan TC, Bramwell K, Hamilton RS, Davis DP, Vilke GM: Comparison of Melcker cricothyrotomy versus standard technique in human cadaver model. ACEP Research Forum, San Diego, California; October 1998.
39. Vilke GM, Chan TC: Effect of a physician speaking directly to prehospital patients who want to sign out against medical advice. NAEMSP Annual Meeting, Marcos Island, Florida; January 1999.
40. Marino A, Vilke GM, Chan TC: Urban paramedics experience, comfort, and accuracy in the estimation of pediatric weights. NAEMSP Annual Meeting, Marcos Island, Florida; January 1999.

41. Ma G, Schmitt J, Chan TC, Vilke GM, Chan D: Using ultrasound to visualize and confirm endotracheal intubation. SAEM Western Regional Research Forum, Redondo Beach, California; March 1999.
42. Chan TC, Davis DP, Bramwell K, Hamilton RS, Vilke GM: Comparison of wire-guided percutaneous cricothyrotomy versus standard cricothyrotomy. SAEM Annual Meeting, Boston, Massachusetts; May 1999.
43. Hamilton RS, Davis DP, Bramwell K, Nordt S, Vilke GM, Chan TC: Lidocaine administration through an esophageally placed Combitube in a canine model. SAEM Annual Meeting, Boston, Massachusetts; May 1999.
44. Vilke GM, Chan TC, Marino A, Iskander J: Knowledge of prescribed medications by ED patients. SAEM Annual Meeting, Boston, Massachusetts; May 1999.
45. Chew GS, Chan TC, Bramwell K, Davis DP, Vilke GM: Does gastric distention from air insufflation affect the accuracy of the syringe esophageal detector device in detecting esophageal intubation? SAEM Annual Meeting, Boston, Massachusetts; May 1999.
46. Ma G, Schmitt J, Chan TC, Vilke GM, Chan D: Using ultrasound to visualize and confirm endotracheal intubation. SAEM Annual Meeting, Boston, Massachusetts; May 1999.
47. Vilke GM, Marino A, Iskander J, Chan TC: Survey of paramedics for latex allergy risk factors. SAEM Western Regional Research Forum, Portland, Oregon; April 2000.
48. Vilke GM, Chan TC, Calkins T, Clark RF: Review of prehospital sodium bicarbonate use for cyclic antidepressant overdose. SAEM Western Regional Research Forum, Portland, Oregon; April 2000.
49. Chan TC, Vilke GM, Choi S, Krishel SJ, Dunford JV: Survey of emergency department patients who accessed 911. SAEM Western Regional Research Forum, Portland, Oregon; April 2000.
50. Schmitt J, Ma G, Vilke GM, Chan TC: Suprasternal versus cricothyroid placement in US guided ET placement. SAEM Annual Meeting, San Francisco, California; May 2000.
51. Schmitt J, Ma G, Vilke GM, Chan TC: Use of air absorbing ultrasound contrast in US ET placement. SAEM Annual Meeting, San Francisco, California; May 2000.
52. Wold R, Davis D, Chan TC, Vilke GM: Clinical decision guideline to identify patients with epidural abscess. SAEM Annual Meeting, San Francisco, California; May 2000.
53. Chan TC, Vilke GM, Neuman TS, Clark RF, Clausen JL: The effect of oleoresin capicum spray inhalation on pulmonary and respiratory function. SAEM Annual Meeting, San Francisco, California; May 2000.

54. Vilke GM, Marino A, Iskander J, Chan TC: Survey of paramedics for latex allergy risk factors. SAEM Annual Meeting, San Francisco, California; May 2000.
55. Vilke GM, Chan TC, Choi S, Krishel SJ, Dunford JV: Survey of emergency department patients who accessed 911. CAL/ACEP Scientific Assembly, Dana Point, California; June 2000.
56. Chan TC, Vilke GM, Neuman TS, Clark RF, Clausen JL: The effect of oleoresin capsicum spray inhalation on pulmonary and respiratory function. CAL/ACEP Scientific Assembly, Dana Point, California; June 2000. (Won Award for Best Research Poster)
57. Vilke GM, Chan TC, Seltzer A, Fisher R, Dunford JV: Outcome of out-of-hospital refusal of paramedic transport by parents of pediatric patients. State of California EMS Authority Annual EMS for Children Conference, San Diego, California; November 2000
58. Vilke GM, Chan TC, Marino A: Urban paramedics' experience, comfort and accuracy in the estimation of pediatric weights. State of California EMS Authority Annual EMS for Children Conference, San Diego, California; November 2000.
59. Chan TC, Dunford JV, Vilke GM: Impact of a community multidisciplinary homeless outreach team. SAEM Western Regional Research Forum, Irvine, California; March 2001.
60. Vilke GM, Chan TC: Prehospital EMT latex allergy risk survey. SAEM Western Regional Research Forum, Irvine, California; March 2001.
61. Vilke GM, Seltzer AG, Fisher R, Dunford JV, Chan TC: Outcome study of minors after initial parental refusal of EMS transport. SAEM Western Regional Research Forum, Irvine, California; March 2001.
62. Chan TC, Vilke GM, Clark RF, Clausen J, Neuman T: Does oleoresin capsicum "pepper spray" exposure impact cardiovascular function in human subjects? SAEM Annual Meeting, Atlanta, Georgia; May 2001.
63. Vilke GM, Seltzer AG, Fisher R, Dunford, JV, Chan TC: Outcome study of minors after initial parental refusal of EMS transport. CAL/ACEP Scientific Assembly, Santa Clara, California; June 2001.
64. Chan TC, Dunford J, Vilke GM, Hix A, Schnell S, Liening J, Edgar J: Effect of a multi-disciplinary serial inebriate program on emergency department visits by chronic alcoholics to two urban area hospitals. ACEP Research Forum, Chicago, Illinois; October 2001.
65. Vilke GM, Sardar W, Fisher R, Dunford JV, Chan TC: Follow-up of elderly patients who refuse transport after accessing 9-1-1. NAEMSP Annual Meeting, Tucson, Arizona; January 2002.

66. Vilke GM, Steen PJ, Smith AM, Chan TC: Out-of-hospital pediatric intubation by paramedics: The San Diego experience. NAEMSP Annual Meeting, Tucson, Arizona; January 2002.
67. Chan TC, Dunford JV, Smith S, Sparrow W, Vilke GM: Impact of an on-call physician on 9-1-1 ambulance transports from a county jail. NAEMSP Annual Meeting, Tucson, Arizona; January 2002.
68. Jenson P, Chan TC, Vilke GM, Leining J, Schenell R, Chester R, Berthelet J, Marcotte A, Simmons C, Kelly D, Dunford J: Effect of a serial inebriate program on hospital and ambulance use by chronic alcoholics. SAEM Western Regional Research Forum, San Diego, California; April 2002.
69. Jin A, Vilke G, Chan T, Davis D: Prospective randomized study of viscous lidocaine vs Hurracaine in a GI cocktail for dyspepsia. SAEM Western Regional Research Forum, San Diego, California; April 2002.
70. Austin T, Vilke GM, Nyheim E, Kelly D, Chan TC: Does the addition of parenteral opiate pre-medication increase risk of complications when combined with methohexital for procedural moderate sedation in the ED? SAEM Western Regional Research Forum, San Diego, California; April 2002.
71. Jenson P, Chan TC, Vilke GM, Leining J, Schenell R, Chester R, Berthelet J, Marcotte A, Simmons C, Kelly D, Dunford J: Effect of a serial inebriate program on hospital and ambulance use by chronic alcoholics. SAEM Annual Meeting, St. Louis, Missouri; May 2002.
72. Jin A, Vilke G, Chan T, Davis D: Prospective randomized study of viscous lidocaine vs Hurracaine in a GI cocktail for dyspepsia. SAEM Annual Meeting, St. Louis, Missouri; May 2002.
73. Austin T, Vilke GM, Nyheim E, Kelly D, Chan TC: Does the addition of parenteral opiate pre-medication increase risk of complications when combined with methohexital for procedural moderate sedation in the ED? SAEM Annual Meeting, St. Louis, Missouri; May 2002.
74. Chan TC, Kelso D, Dunford JV, Vilke GM: Can trained health educators provide screening, brief intervention and referral services in an academic teaching hospital emergency department? SAEM Western Regional Meeting, Scottsdale, Arizona; April 2003.
75. Vilke GM, Smith AM, Upledger-Ray L, Steen PJ, Murrin PA, Chan TC: Airway obstruction in paramedic responses for children less than five years. SAEM Western Regional Meeting, Scottsdale, Arizona; April 2003.
76. Chan TC, Vilke GM, Upledger-Ray L, Smith AM, Stepanski BM, Murrin PA: Helmet use and injuries with scooters, skateboards, rollerblades and skates in children: how do they compare with bicycles? SAEM Western Regional Meeting, Scottsdale, Arizona; April 2003.

77. Vilke GM, Lev R, Castillo EM, Murrin PA, Chan TC: Prospective Countywide Trial to Decrease Ambulance Diversion Hours. SAEM Annual Meeting, Boston, Massachusetts, May 2003.
78. Tran A, Davis DP, Wold RM, Patel R, Chan TC, Vilke GM: The Use of Risk Factor Assessment to Screen for Spinal Epidural Abscess in Emergency Department Patients with Spine Pain. SAEM Annual Meeting, Boston, Massachusetts, May 2003.
79. Chan TC, Kelso D, Dunford JV, Vilke GM: Can Trained Health Educators Provide Screening, Brief Intervention and Referral Services in an Academic Teaching Hospital Emergency Department? SAEM Annual Meeting, Boston, Massachusetts, May 2003.
80. Vilke GM, Lev R, Castillo EM, Metz MA, Murrin PA, Chan TC. San Diego County improved patient destination trial to decrease emergency department diversion hours and diverted patients. ACEP Annual Meeting, Boston, Massachusetts, October 2003.
81. Chan TC, Clausen J, Neuman T, Eisele JW, Vilke GM. Does weight force during physical restraint cause respiratory compromise? ACEP Annual Meeting, Boston, Massachusetts, October 2003.
82. Davis D, Grossman K, Vilke G, Kiggins D, Chan TC. Inadvertent anticoagulation of emergency department patients with aortic dissection. ACEP Annual Meeting, Boston, Massachusetts, October 2003.
83. Killeen JP, Chan TC, Guss, DA. Impact of bar coding technology and computerized physician order entry on reducing laboratory specimen misidentification errors in the emergency department. SAEM Annual Meeting, New York, New York, May 2005.
84. Bush J, Chan TC, Killeen JP, Vilke GM. The effect of changing from a latex agglutination D-Dimer to an ELISA D-Dimer on emergency physicians ordering imaging studies practices to evaluate for pulmonary embolism. SAEM Annual Meeting, New York, New York, May 2005.
85. Vilke GM, Michalewicz B, Kolkhorst FW, Neuman T, Chan TC. Does weight force during physical restraint cause respiratory compromise? SAEM Annual Meeting, New York, New York, May 2005.
86. Levine SD, Sloane C, Chan TC, Vilke GM, Dunford J. Cardiac monitoring of subjects exposed to the Taser. SAEM Annual Meeting, New York, New York, May 2005.
87. Michalewicz, B.A., T.C. Chan, G.M. Vilke, S.S. Levy, T.S. Neuman, and F.W. Kolkhorst. Ventilatory and metabolic demands during aggressive physical restraint in healthy adults. American College of Sports Medicine Annual Meeting, Denver, CO, June 2006. [*Medicine and Science in Sports and Exercise* 38(5 Supplement), 2006].
88. Chan TC, Buono C, Killeen J, Griswold W, Lenert L. Tablet computing for disaster scene managers. AMIA Annual Symposium, Washington, DC, November 2006.



89. Buono C, Huang R, Brown S, Chan TC, Killeen J, Lenert L. Role-tailored software systems for coordinating care at disaster sites: Enhancing collaboration between the base hospitals with the field. AMIA Annual Symposium, Washington, DC, November 2006.
90. Demchak B, Chan TC, Griswold WG, Lenert LA. Situational awareness during mass-casualty events: Command and control. AMIA Annual Symposium, Washington, DC, November 2006.
91. Chan T, Sloane C, Neuman T, Levine S, Castillo E, Vilke G, Bouton K, Kohokorst F. The impact of the taser weapon on respiratory and ventilatory function in human subjects. SAEM Annual Meeting, Chicago, IL, May 2007.
92. Buono C, Lyon J, Huang R, Brown S, Liu F, Vilke G, Killeen J, Chan T, Kirsh D, Lenert L. Does wireless technology improve patient tracking in mass casualty incidents? SAEM Annual Meeting, Chicago, IL, May 2007.
93. Vilke G, Sloane C, Levine S, Neuman T, Castillo E, Chan T. Does the Taser Cause Electrical Changes in Twelve Lead ECG Monitoring of Human Subjects? SAEM Annual Meeting, Chicago, IL, May 2007.
94. Vilke G, Sloane C, Bouton K, Levine S, Neuman T, Castillo E, Kolkhorst F, Chan T. Cardiovascular and metabolic effects of the taser on human subjects. SAEM Annual Meeting, Chicago, IL, May 2007.
95. Sloane C, Vilke G, Chan T, Levine S, Dunford J. Serum troponin I measurement of subjects exposed to the taser x-26. SAEM Annual Meeting, Chicago, IL, May 2007.
96. Chan T, Buono C. Field provider geolocation position tracking at mass gathering events. AMIA Annual Meeting, Chicago, IL, November 2007.
97. Vilke G, Chan T, Killen J, Castillo E. Impact of psychiatric patient holds on the emergency department overcrowding. Acad Emerg Med 2008; 15(5 Suppl 1):S221.
98. Buono C, Lyon J, Chan T, Griswold W, Castillo E, Killeen J, Kirsh D, Lenert L. Does using a wireless, electronic patient data collection system increase patient time on the field? Acad Emerg Med 2008; 15(5 Suppl 1):S12.
99. Chan T, Killeen J, Castillo E, Vilke G, Kennedy S, Feinberg R, Guss D. Impact of an internet-based referral appointment system community clinic access and follow-up for ED patients with no primary care. Acad Emerg Med 2008; 15(5 Suppl 1):S104.
100. Bizek G, Castillo E, Vilke G, Chan T. Characteristics and rates of rewarming of emergency department patients with moderate to severe accidental hypothermia. Ann Emerg Med 2008; 52(4):S104-S105.
101. Vilke GM, Killeen JP, Chan TC, Crumpacker J, Castillo EM. Risk factors and characteristics of falls among emergency department elderly patients. Ann Emerg Med 2008; 52(4):S160.



102. Marsan R, Castillo E, Chan T, Stepanski B, Vilke G. Comparison of prehospital retrospective chart review to prospectively obtained data. Acad Emerg Med 2009; 16(4):S85-S86.
103. Killeen D, Killeen J, Castillo E, Chan T, Vilke G. Emergency department patient evaluation of internet and email access for healthcare information. Acad Emerg Med 2009; 16(4):S132-S133.
104. Sloane C, Chan T, Kohlkorst F, Castillo E, Neuman T, Vilke G. Can a restraint chair cause respiratory or ventilatory compromise? Acad Emerg Med 2009; 16(4):S137.
105. Castillo E, Vilke G, Killeen J, Guss D, Feinberg R, Freidman L, Chan T. Factors associated with community clinic follow-up from an ED internet-based referral system. Acad Emerg Med 2009; 16(4):S247-S248.
106. Marmon J, Castillo E, Vilke G, Killeen J, Chan T. The effect of admitting team resident turnover on emergency department patient flow. Acad Emerg Med 2009; 16(4):S257-S258.
107. Chan TC, Killeen JP, Castillo EM, Lee J. San Diego Safety New Health Information Exchange. Ann Emerg Med 2011;58(4) S390.
108. Chan TC, Killeen JP, Rafie s, Humber DM, Chan TC. Emergency Department Care Provider Perception of Department-Based Pharmacist Services. Ann Emerg Med 2011;58(4) S443.
109. Chan TC, Killeen JP, Castillo EM, Lee J. San Diego Safety New Health Information Exchange. Ann Emerg Med 2011;58(4) S390.
110. Chan TC, Killeen JP, Rafie S, Humber DM, Chan TC. Emergency Department Care Provider Perception of Department-Based Pharmacist Services. Ann Emerg Med 2011;58(4) S443.

**ORAL PRESENTATIONS AT NATIONAL MEETINGS:**

1. Chan TC, Buchanan J, Anderson M, Vilke GM: Patient ethnicity and age in prehospital emergency ambulance use and acuity rates. NAEMSP Mid-Year Meeting, Lake Tahoe, Nevada; July 1998.
2. Vilke GM, Dunford JV, Buchanan J, Chan TC: Are opiate overdose deaths related to patient release after naloxone? ACEP Research Forum, San Diego, California; October 1998.
3. Vilke GM, Chan TC, Ray LU, Anderson ME: Use of prehospital crash injury data to assess regional automobile safety restraint use. NAEMSP Annual Meeting, Marcos Island, Florida; January 1999.
4. Chew GS, Chan TC, Bramwell K, Davis DP, Vilke GM: Does gastric distention from

air insufflation affect the accuracy of the syringe esophageal detector device in detecting esophageal intubation? SAEM Western Regional Research Forum, Redondo Beach, California; March 1999.

5. Marino AT, Sharieff G, Gerhart AE, Chan TC, Vilke GM: The efficacy and complication rate of prehospital midazolam for the treatment of pediatric seizures. NAEMSP Annual Meeting, Dana Point, California; January 2000.
8. Eisele JW, Chan T, Vilke G, Neuman T, Clausen J: Effect of weight placed on the back of subjects in the hobble restraint position. American Academy of Forensic Sciences Annual Meeting, Reno, Nevada; February 2000.
9. Chan TC, Vilke GM, Neuman TS, Clark RF, Clausen JL: The effect of oleoresin capsicum spray inhalation on pulmonary and respiratory function. SAEM Western Regional Research Forum, Portland Oregon; April 2000.
10. Vilke GM, Chan TC, Seltzer A, Fisher R, Dunford JV: Outcome of out-of-hospital refusal of paramedic transport by parents of pediatric patients. State of California EMS Authority Annual EMS for Children Conference, San Diego, California; November 2000.
11. Deitch S, Vilke GM, Marino A, Vroman D, Chan TC: Effect of prehospital use of nitroglycerine on EKG findings in patients with chest pain. American Academy of Emergency Medicine (AAEM) Annual Conference, Orlando, Florida; March 2001.
12. Vilke GM, Steen PJ, Smith AM, Chan TC: Pediatric intubation by paramedics: The San Diego County experience. SAEM Western Regional Research Forum, Irvine, California; March 2001.
13. Chan TC, Dunford JV, Vilke GM: Impact of a community multidisciplinary homeless outreach team. SAEM Annual Meeting, Atlanta, Georgia; May 2001.
14. Chan TC, Dunford JV, Vilke GM: Impact of a community multidisciplinary homeless outreach team. CAL/ACEP Scientific Assembly, Santa Clara, California; June 2001. (Won Award for Best Oral Presentation)
15. Clark RF, Phillips M, Manoguerra AS, Chan TC: Home calls from predominantly Latino communities to a regional poison center. North American Congress of Clinical Toxicology, Montreal, Canada; October 2001.
16. Vilke GM, Lev R, Castillo EM, Metz MA, Murrin PA, Chan TC: Prospective countywide trial to decrease ambulance diversion hours. SAEM Western Regional Meeting, Scottsdale, Arizona; April 2003.
17. Killeen JP, Chan TC, Smith M, Hutches D, Hidley G, Lenert L: Prehospital Field Telemedicine Evaluation Utilizing 1xEV-DO Wireless Internet. American Telemedicine Association Annual Meeting, Orlando, Florida; April 2003.
18. Vilke GM, Lev R, Castillo EM, Metz MA, Murrin PA, Chan TC. The effect of

decreasing ambulance diversion hours on emergency department interfacility transfers. ACEP Annual Meeting, Boston, Massachusetts, October 2003.

19. Killeen J, Chan TC. A wireless first responder handheld device for rapid triage, patient assessment and documentation during mass casualty incidents. AMIA Annual Symposium, Washington, DC, November 2006.
20. Lenert LA, Chan TC, et al: Wireless internet information system for medical response in disasters (WIISARD). AMIA Annual Symposium, Washington, DC, November 2006.
21. Chan TC, Killeen JP, Vilke GM, Guss DA, Jones K, Marshall J, Moore T, Castillo EM. Impact of mandated nurse-patient ratios on emergency department crowding. ACEP Annual Meeting, Chicago, Illinois, October 2008.
22. Castillo E, Vilke G, Killeen J, Guss D, Marshall J, Chan T. Impact of mandated nurse-patient ratios on ED medication delivery. SAEM Annual Meeting, New Orleans, Louisiana, May 2009.

**PRESENTATIONS/SPEAKING ENGAGEMENTS:**

1. "Anorectal Disorders and Emergencies" -- Emergency Medicine Core Curriculum Conference, UCSD Medical Center; December 1993.
2. "Ear and Nose Emergencies" -- Emergency Medicine Core Curriculum Conference, UCSD Medical Center; January 1995.
3. "Marine Envenomations" -- Emergency Medicine Toxicology Conference, UCSD Medical Center; August 1995.
4. "Child Abuse in the Emergency Department" --
  - Emergency Medicine Core Curriculum Conference, UCSD Medical Center; September 1995.
  - Noon Conference, Department of Emergency Services, San Francisco General Hospital; January 1996.
5. "Thrombolytics in Noncardiac Emergencies" -- Grand Rounds, Department of Emergency Medicine, UCSD Medical Center; May 1996.
6. "Billing in the Emergency Department" -- Emergency Medicine Resident Orientation, UCSD Medical Center; July 1996.
7. "EMS Data Innovations - Prehospital AMA Patients" -- Shaping EMS for the 21st Century Conference, Emergency Medical Services Administrators Association of California, San Diego, California; May 1997.
8. "Non-accidental Trauma (NAT)" -- County-wide Field Care Audit, presented by Mercy Hospital and UCSD Medical Center, San Diego, California; May 1998.

9. "Trauma" -- UCSD National City School District Systemic Teacher Enhancement Project, National City, California; June 1998.
10. "Prehospital Research" -- Prehospital Audit Committee, County of San Diego; September 15, 1998.
11. "Emergency Medicine Research" -- Howard Hughes Student Lecture, UC San Diego, November 3, 1998.
12. "The Impact of Oleoresin Capsicum Spray on Respiratory Function in the Sitting and Hobble Restraint Positions" --
  - San Diego Regional Public Safety Training Institute; March 11, 1999.
  - San Diego SWAT Teams Unit; May 12, 1999.
13. "Studies in Restraint Physiology" -- Grand Rounds, Department of Emergency Medicine, UCSD Medical Center; July 13, 1999.
14. Results of the National Institute of Justice Study on Oleoresin Capsicum Spray, sponsored by the U.S. Department of Justice -- San Diego Regional Public Safety Training Institute; September 30, 1999.
15. "Outpatient Treatment of Deep Venous Thrombosis" -- Clinical Practice Guidelines for the Primary Care Physician, sponsored by UCSD School of Medicine, San Diego, California; November 20, 1999.
16. "Restraint Position and Positional Asphyxia" -- Invited presentation to the Health and Human Services Subcommittee, Grand Jury, County of San Diego; November 1999.
17. "Management and Triage of Heart Failure Patients in the Emergency Department" -- Congestive Heart Failure Task Force Conference, UCSD Medical Center; January 26, 2000, February 9, 2000.
18. "Anatomy of a Lawsuit: The Dollars, Sense, and Strategies of Medical Malpractice Litigation" --
  - Housestaff Association, Alumni and Faculty, UCSD Medical Center; March 15, 2000.
  - Department of Medicine Noon Conference, UCSD Medical Center; March 16, 2000.
19. Findings of the National Institute of Justice Study on Oleoresin Capsicum Spray and Respiratory Function -- Nonlethal Defense IV Conference, National Defense Industrial Association, Tysons Corner, Virginia; March 22, 2000.
20. "Overview of Findings From Study on Positional Asphyxia and Pepper Spray" -- to the Liability Panel, Less-Than-Lethal Technology and Policy Assessment, National Institute of Justice, United States Department of Justice, Washington, DC; June 20, 2000.
21. "Positional Asphyxia Review" -- 2000 PPCT Use of Force Conference, St. Louis,

Missouri; July 14, 2000.

22. Keynote Address: "Myocardial Reperfusion" -- Emergency Medicine in Jackson Hole Conference, Jackson Hole, Wyoming; August 14, 2000.
23. Difficult Airway Panel (Davis D, Wolfe R, Chan T, Bramwell K) -- Emergency Medicine in Jackson Hole Conference, Jackson Hole, Wyoming; August 15, 2000.
24. "Conscious Sedation" -- Emergency Medicine in Jackson Hole Conference, Jackson Hole, Wyoming; August 17, 2000.
25. Airway Workshop (Wolfe R, Chan T, Bramwell K, Davis D) -- Emergency Medicine in Jackson Hole Conference, Jackson Hole, Wyoming; August 17, 2000.
26. "Findings of the National Institute of Justice Oleoresin Capsicum Exposure and Restraint Study" -- San Diego Special Enforcement Detail (SWAT), County of San Diego, California; October 18, 2000.
27. "OC Spray and Positional Asphyxia: Separating Fact from Fiction" -- International Association of Chiefs of Police 107th Annual Conference, San Diego, California; November 11, 2000.
28. "Positional Asphyxia and Oleoresin Capsicum: Results of the National Institute of Justice Study" -- Non-Lethal Chemical Agents for Trainers Conference, Carlsbad, California; November 15, 2000.
29. "Common ENT Emergencies Seen in the ED"; "Non-accidental Trauma"; "New Strategies for Acute Myocardial Perfusion"; "Procedural Analgesia and Sedation" -- Mammoth Mountain Emergency Medicine Conference, Mammoth Lakes, California; March 5-6, 2001.
30. "Emerging Infections: The Coming Plague" -- ACEP Emergency Medicine Connection, San Diego, California; March 20, 2001.
31. "Emergency Procedural Analgesia & Sedation" -- CAL/ACEP Scientific Assembly, Santa Clara, California; June 8, 2001.
32. "Clinical Aspects of Bioterrorism" -- San Diego County Health and Human Services; December 6, 2001.
33. "Awareness and Use of the California Regional Poison Center in Two Ethnically Diverse Communities in San Diego" -- San Diego Briefings of the UCSD Civic Collaborative, San Diego, California; March 19, 2002.
34. "Bio-Terrorism: Disaster Preparedness in San Diego" -- Emergency Department Second Annual Symposium, Sharp Grossmont Hospital, San Diego, California; April 17, 2002.
35. "Emergency Management of Rhythm Disorders" -- Arrhythmic & Ischemic

Emergencies: New Treatment Approaches - Dinner Symposium, Los Angeles, California; June 13, 2002.

36. Roundtable on Cultural Diversity Competency and Training -- Council of Residency Directors, ACEP Scientific Assembly, Seattle, Washington, October 7, 2002.
37. "Chemical Agent Overview" -- San Diego County Health and Human Services; January 8, 2003.
38. "Positional Asphyxia and Sudden Custody Death -- Separating Fact from Fiction" -- American Society for Law Enforcement Training, Ontario, California; January 10, 2003.
39. "Reperfusion for AMI" -- Western States Winter Conference on Emergency Medicine, Park City, Utah; January 22, 2003.
40. "ENT Emergencies" -- Western States Winter Conference on Emergency Medicine, Park City, Utah; January 23, 2003.
41. "Bioterrorism Update: Smallpox and Smallpox Vaccination" -- San Diego County Sheriff's Department, SWAT, and Special Enforcement Detail, San Diego, California; February 10, 2003.
42. "Academic Emergency Medicine and Research Opportunities" -- San Diego Health Information Association, San Diego, California; February 11, 2003.
43. "Bioterrorism Update: Smallpox and Smallpox Vaccination" -- San Diego County Sheriff's Department, ASTREA Division, San Diego, California; March 14, 2003.
44. "Positional Asphyxia" -- American Correctional Health Services Association Conference 2003, San Diego, California; September 25, 2003.
45. "Challenging ECG cases in the ED: Pearls and Pitfalls" -- Western States Winter Conference on Emergency Medicine, Park City, Utah; January 28, 2004.
46. "Positional Asphyxia" -- San Diego County Sheriff's Department -- Medical Division, San Diego, California; January 29, 2004.
47. "Improving Patient Flow and Reducing ED Crowding: Findings from 10 Hospitals" -- Urgent Matters, Web-based program, World Wide Web; July 1, 2004.
48. "After-the-Fire Grantee Summit" -- The San Diego Foundation, San Diego, California; October 21, 2004.
49. "Wireless Internet Information System for Medical Response to Disasters -- The WIISARD Project" -- San Diego Metropolitan Medical Strike Team, San Diego, California; November 17, 2004.
50. "Urgent Matters Study (input, throughput, output) of UCSD Medical Center's

Emergency Department" -- San Diego Community Emergency Departments, San Diego, California; December 2, 2004.

51. "Best Practices of other Urgent Matters Hospitals" -- San Diego Community Emergency Departments, San Diego, California; December 2, 2004.
52. "Emergency Room Problems in San Diego: How Can We Improve Quality?" -- The San Diego Patient Safety Consortium Patient Safety Form, San Diego, California; December 16, 2004.
53. "Emergency Response Management for Efficiency of Care and Fiscal Consideration" -- American Correctional Health Services Association, Oakland, California; April 2, 2005.
54. "Promise and Pitfalls: Emergency Department Information Systems" -- Urgent Matters Regional Conferences, Atlanta, Georgia; October 14, 2005.
55. "Promise and Pitfalls: Emergency Department Information Systems" -- Urgent Matters Regional Conferences, Las Vegas, Nevada; October 28, 2005.
56. "Wireless Internet Information System for Medical Response to Disasters" -- Metropolitan Medical Response System Quarterly Meeting, San Diego, California; January 19, 2006.
57. "In-Custody Sudden Deaths" -- Florida Sheriffs Association One Day Symposium, Orlando, Florida; June 1, 2006.
58. "They Didn't Need to Shoot Him: Providing Effective Alternatives to Lethal Force" Plenary Panel -- The National Institute of Justice Conference, Washington D.C.; July 18, 2006.
59. "Use of Force: Sudden Death Myths and Excited Delirium" - The Commission of Accreditation for Law Enforcement Agencies (CALEA) Less Lethal Technology Working Group Meeting, Washington D.C.; September 10, 2006.
60. "Cardiac, Respiratory, and Metabolic Effects of EMD" - NIJ Steering Group Committee, US Department of Justice, Office of Justice Programs, Washington D.C.; October 30, 2006.
61. "IT Innovation in an Academic Emergency Department" - Institute for Healthcare Improvement Meeting, San Diego, California; November 2, 2006.
62. "Restraint Physiology: Separating Fact from Fiction" - Sudden Death, Excited Delirium and In-custody Death Conference, Las Vegas, Nevada; November 16, 2006.
63. "Use of Force and Sudden In-Custody Death" - Minnesota Dept of Public Safety -- Bureau of Criminal Apprehension, Minneapolis, Minnesota; April 30, 2007.
64. "Chlorine Gas Exposure and Chemical Terrorism" - San Diego County Metropolitan



Medical Strike Team, San Diego, California; September 19, 2007.

65. "Power of Innovation: The Strategic Use of Technology to Improve the Patient Experience" – CEO Rounds, UCSD Medical Center, San Diego, California; September 20, 2007.
66. "Tasers" – San Diego County EMS/ED American Medical Response Field Care Audit, San Diego, California; September 26, 2007.
67. "ER Overcrowding;" Panelist – ER Overcrowding Summit, San Diego, California; October 2, 2007.
68. "Restraints and Sudden Death" – Sudden Death, Excited Delirium and In-Custody Death Conference, Las Vegas, Nevada; November 28, 2007.
69. "UCSD Emergency Medicine" – DOM Clinical Service Chief's Meeting, San Diego, California; May 20, 2008.
70. "ED Crowding and Project Impact" – UCSD Healthcare/Preuss School, San Diego, California; July 24, 2008.
71. "Restraint and Sudden Death" – California/Nevada American Correctional Health Services Association – Institute for Medical Quality, San Diego, California; September 18, 2008.
72. "UCSD Emergency Medicine and Community Outreach Efforts" – UCSD Leaders Team Meeting, San Diego, California; September 25, 2008.
73. "ED Clinic Project/Nurse Ratio Project" – San Diego's Annual Emergency Department Overcrowding Summit, San Diego, California; October 8, 2008.
74. "Excited Delirium Restraint and Sudden Death" – Sudden Death, Excited Delirium and In-Custody Death Conference, Las Vegas, Nevada; October 30, 2008.
75. "Safety Net Connect Update" – Hospital Association of San Diego and Imperial Counties, San Diego, California; November 13, 2008.
76. "Understanding Patient Demand in Emergency Department" - Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, San Diego, California; October 14, 2009.
77. "ED-Community Clinics Collaboration" - Annual San Diego County Emergency Department Overcrowding Summit, San Diego, California; October 14, 2009.
78. "Lessons Learned - Emergency Department Crowding" - Urgent Matters Learning Network II, sponsored by the Robert Wood Johnson Foundation and Agency for Healthcare Research and Quality, Philadelphia, Pennsylvania; October 23, 2009.
79. "Restraint Chair Safety and Related Sudden In-Custody Death Asphyxia Issues: A Review of the Literature" – Institute for the Prevention of In-Custody Deaths, Inc., Las

Vegas, Nevada; November 12, 2009.

80. Coordination of Care: The Patient Centered Medical Home and the Role of Community Resources at University of California Healthcare Retreat - Transforming Health Care Delivery at UC, Oakland, California; February 22, 2010.
81. "Technologic Innovations in Emergency Department Intake" - Intermountain Institute for Health Care Delivery Research, Salt Lake City, Utah; February 24, 2010.
82. "Linking Frequent ED Users with Primary Care - A successful program in San Diego" to the Inland Quality Collaborative, Riverside, CA; Aug 18, 2010.
83. "The Impact and Future of SBIRT" – Screening, Brief Intervention, Referral to Treatment Conference, San Diego, CA; Sep 9, 2010.
84. "Beacon Collaborative and Health Reform" – Annual San Diego Organization of Healthcare Leaders Conference, San Diego, CA; Sep 10, 2010.
85. "San Diego Beacon Collaborative and Health IT Workforce" – HealthTECH Workforce Forum, San Diego, CA; Sep 17, 2010.
86. "San Diego Beacon Community Collaborative Update" – Hospital Associate of San Diego and Imperial Counties 2010 Annual Membership Meeting, San Diego, CA; Nov 11, 2010.
87. "Excited Delirium" – 5<sup>th</sup> Annual Sudden Death, Excited Delirium & In-Custody Death Conference, Las Vegas, NV; Nov 18, 2010.
88. "Healthcare IT: BEACON Community Collaborative" – UK Digital Economy Workshop, San Diego, CA; March 17, 2011.
89. "Health IT in an Era of Accountable Care: Update from the Beacon Communities" – Brookings Institute, Washington DC; May 17, 2011.
90. "Emergency Room Diversion/Health Information Exchange" – Health Care Community Network Quarterly Meeting, San Diego, CA; June 15, 2011.
91. Information Technology in Disaster Response - California Institute for Telecommunications and Information Technology - 10 year academic review, San Diego, CA; Oct 12, 2011.
92. Information Technology in the Emergency Department San Diego Overcrowding Summit, Scripps Healthcare, San Diego, CA; Oct 27, 2011.
93. The New Prescription: IT's role in transforming medicine. BLOCOM, San Diego, CA; December 9, 2011.
94. Beacon Community Town Hall. Healthcare Information and Management Systems Society, Las Vegas, NV; Feb 22, 2012.